

## Maths Department – Year 12 course, 2 year scheme of work 2019 – 2021

Examination specification: Pearson Edexcel 9MA0

Edexcel Pure Mathematics Year 1 & 2 / Edexcel Statistics & Mechanics Year 1 & 2

Online resources: [mathsemporium.com](http://mathsemporium.com) / [mymaths.co.uk](http://mymaths.co.uk) / [DrFrostmaths.com](http://DrFrostmaths.com) / [geogebra.com](http://geogebra.com) / [desmos.com](http://desmos.com) / [nrich.com](http://nrich.com)

SEN/support resources: [mymaths.co.uk](http://mymaths.co.uk) / [mathsgenie.co.uk](http://mathsgenie.co.uk) / [examsolutions.net](http://examsolutions.net)

This Summary Year 12 SOW sets out the order of teaching together with the learning objectives. Opportunities to develop and explore British values, literacy, real world applications, communication skills and cross curricular knowledge are included. RISP challenge tasks can be found here: [..\List of RISPs.pdf](#)

A full list of the Edexcel units is available here: [Edexcel A level Mathematics 2 years Scheme of Work - detailed.docx](#) This document contains detailed specification references, learning outcomes, objectives, keywords, prior knowledge, teaching points, misconceptions, support ideas, examiner report quotes, suggested use of IT and opportunities for problem solving and challenge tasks.

Each year the Summary Year 12 SOW will set the timeline depending on the staff available in the department as well as the individual nature of the student cohort. Once this is set, teachers should follow the Year 12 SOW Summary document together with the detailed Edexcel SOW document to plan lessons appropriately

A level Mathematics	
<b>Paper 1:</b> Pure Mathematics 33%, 2 hours, 100 marks	Any pure content can be assessed on either paper
<b>Paper 2:</b> Pure Mathematics 33%, 2 hours, 100 marks	
<b>Paper 3:</b> Statistics and Mechanics 33%, 2 hours, 100 marks	Section A: Statistics (50 marks) Section B: Mechanics (50 marks)

Time-line	Subject topics & Learning Outcomes	Resources / activities (including ICT)	Assessment & skills (including ICT)	SEN / EHC / EAL / Gifted & talented
Year 12, Autumn half term 1: 3 hours Pure Maths per week 1 hour 20 Statistics per week				Challenge tasks, teaching points and SEN support contained in Detailed SOW.  EAL – Maths keywords contained in Detailed SOW In addition, consider:
Week 1 - 6, Pure Maths	Algebra and functions: Algebraic expressions, quadratic functions, simultaneous equations, inequalities, graphs and transformations  Coordinate Geometry in the (x, y) plane: Straight Line Graphs, Circles	Edexcel Year 1 Pure Maths Textbook  Chapters 1 - 6	<a href="..\..\Edexcel AS Unit tests\Pure Mathematics\AS Maths Pure Unit 1 Test Algebra &amp; Functions.doc">..\..\Edexcel AS Unit tests\Pure Mathematics\AS Maths Pure Unit 1 Test Algebra &amp; Functions.doc</a>  <a href="..\..\Edexcel AS Unit tests\Pure Mathematics\AS Maths Pure Unit 2 Test Coordinate Geom.doc">..\..\Edexcel AS Unit tests\Pure Mathematics\AS Maths Pure Unit 2 Test Coordinate Geom.doc</a>  Use of desmos and geogebra to explore quadratic functions and modelling  Use of desmos and geogebra to explore graph transformations	Algebra: RISP3 RISP8 RISP21 RISP35  Coordinate Geom: RISP5 RISP9 RISP10 RISP15 RISP17 RISP21 RISP37  Curve sketching: RISP33 - 37  Polynomials: RISP6 RISP10 Inequalities: RISP33  Mymaths: Bridging The Gap from GCSE modules  <a href="https://www.mathsgenie.co.uk/alevel.html">https://www.mathsgenie.co.uk/alevel.html</a>  <a href="https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet">https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet</a>
Week 1 - 6 Statistics	Statistical sampling: sampling terminology, advantages and disadvantages, sampling techniques and comparing in context  Data presentation and interpretation: Measures of location and spread including standard deviation and variance, using coding with data, use of calculator, scatter diagrams, box plots, outliers, histograms, cumulative frequency graphs  Probability – mutually exclusive events and independent events. Tree diagrams and Venn diagrams	Edexcel Year 1 Statistics & Mechanics Textbook  Chapters 1 - 4	<a href="..\..\Edexcel AS Unit tests\AS Unit Tests Statistics\AS Maths Statistics Unit 1 Test Statistical Sampling.docx">..\..\Edexcel AS Unit tests\AS Unit Tests Statistics\AS Maths Statistics Unit 1 Test Statistical Sampling.docx</a>  <a href="..\..\Edexcel AS Unit tests\AS Unit Tests Statistics\AS Maths Statistics Unit 2 Test Data presentation &amp; Interpretation.docx">..\..\Edexcel AS Unit tests\AS Unit Tests Statistics\AS Maths Statistics Unit 2 Test Data presentation &amp; Interpretation.docx</a>  <a href="..\..\Edexcel AS Unit tests\AS Unit Tests Statistics\AS Maths Statistics Unit 3 Test Probability.docx">..\..\Edexcel AS Unit tests\AS Unit Tests Statistics\AS Maths Statistics Unit 3 Test Probability.docx</a>	Mymaths: Bridging The Gap from GCSE modules  <a href="https://www.mathsgenie.co.uk/alevel.html">https://www.mathsgenie.co.uk/alevel.html</a>  <a href="https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet">https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet</a>
'British values' evidence? Literacy? Communication skills? Knowledge across diff. areas of learning?	Discuss: Simplifying expressions and graph transformations as form of communication  Real life modelling using quadratics and applications in physics, engineering and sciences  Sampling techniques in the real world, marketing, politics and misleading statistics  Hans Roslings' "200 countries in 200 years" <a href="https://www.tes.com/lessons/df6o9-AnY6t68Q/statistics-the-visual">https://www.tes.com/lessons/df6o9-AnY6t68Q/statistics-the-visual</a>  Sally Clark convicted on statistics <a href="https://understandinguncertainty.org/node/545">https://understandinguncertainty.org/node/545</a>			

<p><b>Year 12, Autumn half term 2:</b></p> <p><b>3 hours Pure Maths per week</b> <b>1 hour 20 Statistics per week</b></p>				<p>Challenge tasks, teaching points and SEN support contained in Detailed SOW.</p> <p>EAL – Maths keywords contained in Detailed SOW</p> <p>In addition, consider:</p>
<p>Week 7 – 12</p> <p>Pure</p>	<p>Further Algebra: Algebraic Long division, factor theorem, binomial expansion</p> <p>Trigonometry: Trig ratios and graphs, identities and equations</p>	<p>Edexcel Year 1 Pure Maths Textbook</p> <p>Chapters 7 - 10</p>	<p><a href="..\..\Edexcel AS Unit tests\Pure Mathematics\AS Maths Pure Unit 3 Test Further algebra.doc">..\..\Edexcel AS Unit tests\Pure Mathematics\AS Maths Pure Unit 3 Test Further algebra.doc</a></p> <p><a href="..\..\Edexcel AS Unit tests\Pure Mathematics\AS Maths Pure Unit 4 Test Trig.doc">..\..\Edexcel AS Unit tests\Pure Mathematics\AS Maths Pure Unit 4 Test Trig.doc</a></p>	<p>Mymaths: Bridging The Gap from GCSE modules</p> <p><a href="https://www.mathsgenie.co.uk/alevel.html">https://www.mathsgenie.co.uk/alevel.html</a></p> <p>Trigonometry: RISP24</p> <p><a href="https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet">https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet</a></p>
<p>Week 7 – 12</p> <p>Statistics</p>	<p>Statistical Distributions: using discrete binomial distributions, discrete uniform distributions and finding probabilities using the binomial distribution</p> <p>Hypothesis Testing: Language and method of hypothesis tests involving the binomial distribution</p>	<p>Edexcel Year 1 Statistics &amp; Mechanics Textbook</p> <p>Chapters 5 - 7</p>	<p><a href="..\..\Edexcel AS Unit tests\AS Unit Tests Statistics\AS Maths Statistics Unit 4 Test Statistical Distributions.docx">..\..\Edexcel AS Unit tests\AS Unit Tests Statistics\AS Maths Statistics Unit 4 Test Statistical Distributions.docx</a></p> <p><a href="..\..\Edexcel AS Unit tests\AS Unit Tests Statistics\AS Maths Statistics Unit 5 Test Hypothesis Testing.docx">..\..\Edexcel AS Unit tests\AS Unit Tests Statistics\AS Maths Statistics Unit 5 Test Hypothesis Testing.docx</a></p>	<p><a href="#">Hypothesis Testing Activity</a></p> <p><a href="https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet">https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet</a></p> <p><a href="https://www.mathsgenie.co.uk/alevel.html">https://www.mathsgenie.co.uk/alevel.html</a></p>
<p>'British values' evidence? Numeracy? Communication skills? Knowledge across diff. areas of learning?</p>	<p>Examples of hypothesis testing in the real world e.g. finance and health</p> <p>Learn about using trig graphs in Music Technology</p>			

<p><b>Year 12, Spring half term 2:</b></p> <p><b>3 hours Pure Maths per week</b> <b>1 hour 20 Statistics per week</b></p>				<p>Challenge tasks, teaching points and SEN support contained in Detailed SOW.</p> <p>EAL – Maths keywords contained in Detailed SOW</p> <p>In addition, consider:</p>
<p>Week 1 - 6, Pure Maths</p>	<p>Vectors in 2D: Magnitude and direction, addition and scalar multiplication, position vectors, distance between two points, geometric problems</p> <p>Differentiation: polynomials, gradients, tangents, normal, use of second derivative, maxima and minima</p> <p>Integration: Finding indefinite and definite integrals, areas under curves</p>	<p>Edexcel Year 1 Pure Maths Textbook</p> <p>Chapters 11 - 13</p>	<p><a href="..\..\Edexcel AS Unit tests\Pure Mathematics\AS Maths Pure Unit 5 Test Vectors.doc">..\..\Edexcel AS Unit tests\Pure Mathematics\AS Maths Pure Unit 5 Test Vectors.doc</a></p> <p><a href="..\..\Edexcel AS Unit tests\Pure Mathematics\AS Maths Pure Unit 6 Test Differentiation.doc">..\..\Edexcel AS Unit tests\Pure Mathematics\AS Maths Pure Unit 6 Test Differentiation.doc</a></p> <p><a href="..\..\Edexcel AS Unit tests\Pure Mathematics\AS Maths Pure Unit 7 Test Integration.doc">..\..\Edexcel AS Unit tests\Pure Mathematics\AS Maths Pure Unit 7 Test Integration.doc</a></p>	<p><a href="https://www.mathsgenie.co.uk/alevel.html">https://www.mathsgenie.co.uk/alevel.html</a></p> <p>Differentiation: RISP36</p> <p>Integration: RISP25</p> <p><a href="https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet">https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet</a></p>
<p>Week 1- 6 Statistics</p>	<p>Regression &amp; Correlation: change of variable, correlation coefficients, hypothesis testing of pmcc</p> <p>Probability: use of set notation, conditional probability, questioning assumptions in probability</p>	<p>Edexcel Year 2 Statistics &amp; Mechanics Textbook</p> <p>Chapters 1 -2</p>	<p><a href="..\..\Edexcel A2 Unit Tests\Stats\AL Maths Statistics Unit 1 Test Regression &amp; Correlation.docx">..\..\Edexcel A2 Unit Tests\Stats\AL Maths Statistics Unit 1 Test Regression &amp; Correlation.docx</a></p> <p><a href="..\..\Edexcel A2 Unit Tests\Stats\AL Maths Statistics Unit 2 Test Probability.docx">..\..\Edexcel A2 Unit Tests\Stats\AL Maths Statistics Unit 2 Test Probability.docx</a></p>	<p><a href="https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet">https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet</a></p> <p><a href="https://www.mathsgenie.co.uk/alevel.html">https://www.mathsgenie.co.uk/alevel.html</a></p>
<p>'British values' evidence? Numeracy? Communication skills? Knowledge across diff. areas of learning?</p>	<p>Discovery of calculus by Newton and Leibniz and the story behind this new area of maths and the development of new notation</p>			

<p><b>Year 12, Spring half term 2:</b></p> <p><b>3 hours Pure Maths per week</b> <b>1 hour 20 Statistics per week</b></p>				<p>Challenge tasks, teaching points and SEN support contained in Detailed SOW.</p> <p>EAL – Maths keywords contained in Detailed SOW</p> <p>In addition, consider:</p>
<p>Week 7 -12</p> <p>Pure Maths</p>	<p>Exponentials &amp; Logarithms: Exponential functions and natural logarithm, solving equations, modelling in real life</p> <p>Algebraic Proof: use of counter examples. Deduction and proof by contradiction</p> <p>Algebraic and partial fractions: simplifying algebraic fractions, partial fractions</p>	<p>Edexcel Year 1 Pure Maths Textbook Chapter 14</p> <p>Edexcel Year 2 Pure Maths Textbook Chapters 1 -2</p>	<p><a href="..\..\Edexcel AS Unit tests\Pure Mathematics\AS Maths Pure Unit 8 Test Exponentials &amp; Logs.doc">..\..\Edexcel AS Unit tests\Pure Mathematics\AS Maths Pure Unit 8 Test Exponentials &amp; Logs.doc</a></p> <p><a href="..\..\Edexcel A2 Unit Tests\Pure\AL Maths Pure Unit 1 Proof.doc">..\..\Edexcel A2 Unit Tests\Pure\AL Maths Pure Unit 1 Proof.doc</a></p> <p><a href="..\..\Edexcel A2 Unit Tests\Pure\AL Maths Pure Unit 2 Algebraic and partial fractions.doc">..\..\Edexcel A2 Unit Tests\Pure\AL Maths Pure Unit 2 Algebraic and partial fractions.doc</a></p>	<p>Exponentials &amp; Logs: RISP13 RISP31 RISP33</p> <p>Proof: RISP1 RISP12</p> <p><a href="https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet">https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet</a> <a href="https://www.mathsgenie.co.uk/alevel.html">https://www.mathsgenie.co.uk/alevel.html</a></p>
<p>Week 7- 12</p> <p>Statistics</p>	<p>The Normal Distribution: understand and use the normal distribution, use as an approximation to the binomial distribution, selection of appropriate distributions, hypothesis testing</p>	<p>Edexcel Year 2 Statistics &amp; Mechanics Textbook Chapters 3</p>	<p><a href="..\..\Edexcel A2 Unit Tests\Stats\AL Maths Statistics Unit 3 Test Normal Distribution.docx">..\..\Edexcel A2 Unit Tests\Stats\AL Maths Statistics Unit 3 Test Normal Distribution.docx</a></p>	<p><a href="https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet">https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet</a> <a href="https://www.mathsgenie.co.uk/alevel.html">https://www.mathsgenie.co.uk/alevel.html</a></p>
<p>'British values' evidence? Numeracy? Communication skills? Knowledge across diff. areas of learning?</p>	<p>Explore why exponential graphs are used so widely in modelling real life situations e.g. population, health, growth/decay etc.</p> <p>Discuss the nature of mathematical proof with reference to history and key mathematicians. Consider different levels of proof, demonstrations, measurements etc with reference to other scientific areas</p> <p>Discuss the importance of the Normal Distribution and its applications in real life</p>			

<p><b>Year 12, Summer half term 1:</b></p> <p><b>3 hours Pure Maths per week</b> <b>1 hour 20 Mechanics per week</b></p>				<p>Challenge tasks, teaching points and SEN support contained in Detailed SOW.</p> <p>EAL – Maths keywords contained in Detailed SOW</p> <p>In addition, consider:</p>
<p>Week 1 -6</p> <p>Pure Maths</p>	<p>Functions &amp; Modelling: the modulus function, composite and inverse functions, transformations, modelling with functions</p> <p>Series and Sequences: arithmetic and geometric progressions, sigma notation, recurrence relationships and iterations</p>	<p>Edexcel Year 2 Pure Maths Textbook</p> <p>Chapters 2 - 3</p>	<p><a href="..\..\Edexcel A2 Unit Tests\Pure\AL Maths Pure Unit 3 Functions and modelling.doc">..\..\Edexcel A2 Unit Tests\Pure\AL Maths Pure Unit 3 Functions and modelling.doc</a></p> <p><a href="..\..\Edexcel A2 Unit Tests\Pure\AL Maths Pure Unit 4 Sequences and series.doc">..\..\Edexcel A2 Unit Tests\Pure\AL Maths Pure Unit 4 Sequences and series.doc</a></p>	<p>Functions: RISP4 RISP18</p> <p>Series: RISP2 RISP14 RISP20</p> <p><a href="https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet">https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet</a></p> <p><a href="https://www.mathsgenie.co.uk/alevel.html">https://www.mathsgenie.co.uk/alevel.html</a></p>
<p>Week 1 -6</p> <p>Mechanics</p>	<p>Quantities and units: introduction to mathematical modelling and standard units in mechanics</p> <p>Kinematics with constant acceleration: suvat equations and graphical representation of velocity, acceleration and displacement</p>	<p>Edexcel Year 1 Statistics &amp; Mechanics Textbook</p> <p>Chapters 8 - 9</p>	<p><a href="..\..\Edexcel AS Unit tests\Mechanics\AS Maths Mechanics Unit 6 Test Quantities &amp; Units.docx">..\..\Edexcel AS Unit tests\Mechanics\AS Maths Mechanics Unit 6 Test Quantities &amp; Units.docx</a></p> <p><a href="..\..\Edexcel AS Unit tests\Mechanics\AS Maths Mechanics Unit 7 Test Kinematics constant acc.docx">..\..\Edexcel AS Unit tests\Mechanics\AS Maths Mechanics Unit 7 Test Kinematics constant acc.docx</a></p>	<p><a href="https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet">https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet</a></p> <p><a href="https://www.mathsgenie.co.uk/alevel.html">https://www.mathsgenie.co.uk/alevel.html</a></p>
<p>'British values' evidence? Numeracy? Communication skills? Knowledge across diff. areas of learning?</p>	<p>Use of series mathematics in finance, health and government planning</p> <p>Development of series notation and why we need it</p> <p>Introduce mechanics with reference to physics syllabus</p>			

<b>Year 12, Summer half term 2:</b> <b>3 hours Pure Maths per week</b> <b>1 hour 20 Mechanics per week</b>				Challenge tasks, teaching points and SEN support contained in Detailed SOW.  EAL – Maths keywords contained in Detailed SOW  In addition, consider:
Week 7 - 12  Pure Maths	The Binomial Theorem: binomial expansions, validity ranges, use of partial fractions and finding approximate solutions to surds  Trigonometry: radians, arcs, sectors, small angle approximations, sec, cosec and cot, compound and double angle formulae, $R \cos(x \pm \alpha)$ or $R \sin(x \pm \alpha)$ , use of trig identities and solving applied problems	Edexcel Year 2 Pure Maths Textbook  Chapters 6 - 8	<a href="..\..\Edexcel A2 Unit Tests\Pure\AL Maths Pure Unit 5 The Binomial Theorem.doc">..\..\Edexcel A2 Unit Tests\Pure\AL Maths Pure Unit 5 The Binomial Theorem.doc</a>  <a href="..\..\Edexcel A2 Unit Tests\Pure\AL Maths Pure Unit 6 Trigonometry &amp; Radians.doc">..\..\Edexcel A2 Unit Tests\Pure\AL Maths Pure Unit 6 Trigonometry &amp; Radians.doc</a>	Binomial: RISP19 RISP22 RISP32  Trigonometry: RISP23 RISP26  <a href="https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet">https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet</a>  <a href="https://www.mathsgenie.co.uk/alevel.html">https://www.mathsgenie.co.uk/alevel.html</a>
Week 7 - 12  Mechanics	Forces & Newton's Laws: Newton's first law, force diagrams, equilibrium, introduction to i and j vector form  Kinematics with variable acceleration: variable forces, use of calculus to determine rates of change	Edexcel Year 1 Statistics & Mechanics Textbook  Chapters 10 - 11	<a href="..\..\Edexcel AS Unit tests\Mechanics\AS Maths Mechanics Unit 8 Test Forces &amp; Newton's Laws.docx">..\..\Edexcel AS Unit tests\Mechanics\AS Maths Mechanics Unit 8 Test Forces &amp; Newton's Laws.docx</a>  <a href="..\..\Edexcel AS Unit tests\Mechanics\AS Maths Mechanics Unit 9 Test Kinematics variable acc.docx">..\..\Edexcel AS Unit tests\Mechanics\AS Maths Mechanics Unit 9 Test Kinematics variable acc.docx</a>	<a href="https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet">https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet</a>  <a href="https://www.mathsgenie.co.uk/alevel.html">https://www.mathsgenie.co.uk/alevel.html</a>
'British values' evidence? Numeracy? Communication skills? Knowledge across diff. areas of learning?	Explore the legacy of Newton's Laws and the history behind them.  Consider $R \cos(x \pm \alpha)$ or $R \sin(x \pm \alpha)$ as an application of transforming a sin x or cos x graph and the importance of this form in real life modelling.			

Time-line	Subject topics & Learning Outcomes	Resources / activities (including ICT)	Assessment & skills (including ICT)	SEN / EHC / EAL / Gifted & talented
<b>Year 13, Autumn half term 1:</b> <b>3 hours Pure Maths per week</b> <b>2 hours Mechanics per week</b>				Challenge tasks, teaching points and SEN support contained in Detailed SOW.  EAL – Maths keywords contained in Detailed SOW  In addition, consider:
Week 1 - 6,  Pure Maths	Parametric equations: definitions and converting between parametric and Cartesian forms, sketching and modelling  Differentiation Part 1: first principles, differentiating trig expressions, exponentials and logs, product rule, chain rule, quotient rule, second derivatives, rates of change modelling problems	Edexcel Year 2 Pure Maths Textbook  Chapter 9	<a href="..\..\Edexcel A2 Unit Tests\Pure\AL Maths Pure Unit 7 Parametric equations.doc">..\..\Edexcel A2 Unit Tests\Pure\AL Maths Pure Unit 7 Parametric equations.doc</a>  <a href="..\..\Edexcel A2 Unit Tests\Pure\AL Maths Pure Unit 8 Differentiation.doc">..\..\Edexcel A2 Unit Tests\Pure\AL Maths Pure Unit 8 Differentiation.doc</a>	Parametric equations: RISP27  <a href="https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet">https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet</a>  <a href="https://www.mathsgenie.co.uk/alevel.html">https://www.mathsgenie.co.uk/alevel.html</a>
Week 1 - 6  Mechanics	Moments: Forces and turning effects, equilibrium and on point of turning  Forces at any angle: Resolving forces and using coefficient of friction in problem solving  Projectiles: applications of kinematics with projectiles	Edexcel Year 2 Statistics & Mechanics Textbook  Chapters 4 - 6	<a href="..\..\Edexcel A2 Unit Tests\Mechanics\AL Maths Mechanics Unit 4 Test Moments.docx">..\..\Edexcel A2 Unit Tests\Mechanics\AL Maths Mechanics Unit 4 Test Moments.docx</a>  <a href="..\..\Edexcel A2 Unit Tests\Mechanics\AL Maths Mechanics Unit 5 Test Forces at an angle.docx">..\..\Edexcel A2 Unit Tests\Mechanics\AL Maths Mechanics Unit 5 Test Forces at an angle.docx</a>  <a href="..\..\Edexcel A2 Unit Tests\Mechanics\AL Maths Mechanics Unit 6 Test Applications of kinematics.docx">..\..\Edexcel A2 Unit Tests\Mechanics\AL Maths Mechanics Unit 6 Test Applications of kinematics.docx</a>	<a href="https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet">https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet</a>  <a href="https://www.mathsgenie.co.uk/alevel.html">https://www.mathsgenie.co.uk/alevel.html</a>
'British values' evidence? Literacy? Communication skills? Knowledge across diff. areas of learning?	Explore the history of Descartes and his development of Cartesian axes. Consider polar coordinates and imaginary number coordinates in context of communicating mathematical concepts			



<p><b>Year 13, Autumn half term 2:</b></p> <p><b>3 hours Pure Maths per week</b> <b>2 hours Mechanics per week</b></p>				<p>Challenge tasks, teaching points and SEN support contained in Detailed SOW.</p> <p>EAL – Maths keywords contained in Detailed SOW</p> <p>In addition, consider:</p>
<p>Week 7 – 12</p> <p>Pure</p>	<p>Differentiation Part 2: first principles, differentiating trig expressions, exponentials and logs, product rule, chain rule, quotient rule, second derivatives, rates of change modelling problems</p> <p>Numerical Methods: Location of roots, solving using iterations, Newton-Raphson method, problem solving</p>	<p>Edexcel Year 2 Pure Maths Textbook</p> <p>Chapters 9 - 10</p>	<p><a href="#">..\..\Edexcel A2 Unit Tests\Pure\AL Maths Pure Unit 8 Differentiation.doc</a></p> <p><a href="#">..\..\Edexcel A2 Unit Tests\Pure\AL Maths Pure Unit 9 Numerical Methods.doc</a></p>	<p>Numerical methods: RISP25</p> <p><a href="https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet">https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet</a></p> <p><a href="https://www.mathsgenie.co.uk/alevel.html">https://www.mathsgenie.co.uk/alevel.html</a></p>
<p>Week 7 – 12</p> <p>Mechanics</p>	<p>Application of forces: Equilibrium and statics of particles and rigid bodies</p> <p>Further kinematics: constant acceleration with equations in 2D vector form, use of calculus in vector form and position vector problems</p>	<p>Edexcel Year 2 Statistics &amp; Mechanics Textbook</p> <p>Chapters 7 - 8</p>	<p><a href="#">..\..\Edexcel A2 Unit Tests\Mechanics\AL Maths Mechanics Unit 7 Test Applications of Forces.docx</a></p> <p><a href="#">..\..\Edexcel A2 Unit Tests\Mechanics\AL Maths Mechanics Unit 8 Test Further kinematics.docx</a></p>	<p><a href="https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet">https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet</a></p> <p><a href="https://www.mathsgenie.co.uk/alevel.html">https://www.mathsgenie.co.uk/alevel.html</a></p>
<p>'British values' evidence? Numeracy? Communication skills? Knowledge across diff. areas of learning?</p>	<p>Consider why we have to have numerical methods to locate roots of some functions. Look at the history behind the Newton-Raphson method and further refinements.</p> <p>Real life applications of forces in equilibrium and kinematics</p>			

<p><b>Year 13, Spring half term 1:</b></p> <p><b>4 hours Pure Maths per week</b>  <b>1 hours Applied Maths per week</b></p>				<p>Challenge tasks, teaching points and SEN support contained in Detailed SOW.</p> <p>EAL – Maths keywords contained in Detailed SOW</p> <p>In addition, consider:</p>
<p>Week 1 - 6, Pure Maths</p>	<p>Integration Part 1: Integrating polynomials now including exponentials and trig functions, using the reverse of differentiation and using trig identities to manipulate integrals</p> <p>Integration Part 2: Integration by substitution, by parts, use of partial fractions, areas under graphs between 2 curves, the trapezium rule, differential equations</p>	<p>Edexcel Year 2 Pure Maths Textbook</p> <p>Chapter 11</p>	<p><a href="#">..\Edexcel A2 Unit Tests\Pure\AL Maths Pure Unit 10 Integration 1.doc</a></p> <p><a href="#">..\Edexcel A2 Unit Tests\Pure\AL Maths Pure Unit 11 Integration 2.doc</a></p>	<p>Differential equations: RISP28 RISP30</p> <p><a href="https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet">https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet</a></p> <p><a href="https://www.mathsgenie.co.uk/alevel.html">https://www.mathsgenie.co.uk/alevel.html</a></p>
<p>Week 1- 6 Statistics &amp; Mechanics</p>	<p>Revision of Applied Topics</p>			<p><a href="https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet">https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet</a></p> <p><a href="https://www.mathsgenie.co.uk/alevel.html">https://www.mathsgenie.co.uk/alevel.html</a></p>
<p>'British values' evidence? Numeracy? Communication skills? Knowledge across diff. areas of learning?</p>				

<p><b>Year 13, Spring half term 2:</b></p> <p><b>4 hours Pure Maths per week</b>  <b>1 hours Applied Maths per week</b></p>				<p>Challenge tasks, teaching points and SEN support contained in Detailed SOW.</p> <p>EAL – Maths keywords contained in Detailed SOW</p> <p>In addition, consider:</p>
<p>Week 7 -12</p> <p>Pure Maths</p>	<p>Vectors in 3D: use of vectors in 3 dimensions, column vectors and <math>i</math>, <math>j</math> and <math>k</math> vectors</p> <p>Revision</p>	<p>Edexcel Year 2 Pure Maths Textbook</p> <p>Chapter 12</p>	<p><a href="#">..\Edexcel A2 Unit Tests\Pure\AL Maths Pure Unit 12 Vectors.doc</a></p>	<p>Vectors: RISP29</p> <p><a href="https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet">https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet</a></p> <p><a href="https://www.mathsgenie.co.uk/alevel.html">https://www.mathsgenie.co.uk/alevel.html</a></p>
<p>Week 7- 12</p> <p>Statistics &amp; mechanics</p>	<p>Revision of Applied Topics</p>			<p><a href="https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet">https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet</a></p> <p><a href="https://www.mathsgenie.co.uk/alevel.html">https://www.mathsgenie.co.uk/alevel.html</a></p>
<p>'British values' evidence?  Numeracy?  Communication skills?  Knowledge across diff. areas of learning?</p>				

<b>Year 13, Summer half term 1:</b>				Challenge tasks, teaching points and SEN support contained in Detailed SOW.  EAL – Maths keywords contained in Detailed SOW  In addition, consider:
Week 1 -6 Pure Maths	<b>Revision</b>			<a href="https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet">https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet</a>  <a href="https://www.mathsgenie.co.uk/alevel.html">https://www.mathsgenie.co.uk/alevel.html</a>
Week 1 -6 Applied Maths	<b>Revision</b>			<a href="https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet">https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet</a>  <a href="https://www.mathsgenie.co.uk/alevel.html">https://www.mathsgenie.co.uk/alevel.html</a>
<b>Year 13, Summer half term 2:</b>				Challenge tasks, teaching points and SEN support contained in Detailed SOW.  EAL – Maths keywords contained in Detailed SOW  In addition, consider:
Week 7 - 12 Pure Maths	<b>EXAMINATIONS</b>			<a href="https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet">https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet</a>  <a href="https://www.mathsgenie.co.uk/alevel.html">https://www.mathsgenie.co.uk/alevel.html</a>
Week 7 - 12 Mechanics	<b>EXAMINATIONS</b>			<a href="https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet">https://www.teachitmaths.co.uk/all-ks5-resources?sort=alphabet</a>  <a href="https://www.mathsgenie.co.uk/alevel.html">https://www.mathsgenie.co.uk/alevel.html</a>